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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,773	03/31/2004	Joseph Deuringer	P04,0119	5205
7590 07/07/2005			EXAMINER	
SCHIFF HARDIN LLP Patent Department 6600 Sears Tower 233 South Wacker Drive Chicago, IL 60606			YUN, JURIE	
			ART UNIT	PAPER NUMBER
			2882	
DATE MAILED: 07/07/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

<b>Office Action Summary</b>	<b>Application No.</b> 10/813,773	<b>Applicant(s)</b> DEURINGER ET AL.	
	<b>Examiner</b> Jurie Yun	<b>Art Unit</b> 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Crawford et al. (USPN 5,970,113).

3. With respect to claim 1, Crawford et al. disclose an apparatus for generating x-rays comprising: a structural unit (Fig. 4) containing a plurality of components operable in combination for generating x-rays, including an x-ray tube (128) and a digital control, regulation and storage unit (511 & 513) connected to all of said components, including being connected to said x-ray tube for controlling operation of said x-ray tube; a peripheral device containing a process computer (computers); and said digital control, regulation and storage unit having an interface, accessible at said structural unit, to said process computer, said interface forming a single interface to said process computer for all of the components in said structural unit (via wireless LAN technology – column 12, lines 12+).

4. With respect to claim 9, Crawford et al. disclose a high voltage generator (column 11, lines 28-29) connected to the x-ray tube for supplying high voltage to the x-ray tube for operating the x-ray tube.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford et al. (USPN 5,970,113) as applied to claim 1 above.

7. With respect to claim 2, Crawford et al. disclose the x-ray tube has a cathode (column 11, line 30), but are silent as to a heater current source connected to the cathode for heating said cathode. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the x-ray tube includes a heater current source connected to the cathode for heating the cathode, to produce x-rays.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford et al. (USPN 5,970,113) as applied to claim 1 above, and further in view of Richardson et al. (USPN 6,519,317 B2).

9. With respect to claim 3, Crawford et al. disclose a cooling unit (507) associated with said x-ray tube (128) for circulating a coolant for cooling the x-ray tube, but are silent as to a sensor for sensing at least one of a pressure and a temperature of said coolant. Richardson et al. disclose a sensor for sensing pressure of the x-ray tube coolant (column 8, lines 20-27). It would have been obvious to one of ordinary skill in

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the art at the time the invention was made to include pressure and/or temperature sensing means in Crawford et al., as taught by Richardson et al., to ensure sufficient cooling/pressure of the x-ray tube, which would result in longer life of the x-ray tube.

10. Claims 4, 6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford et al. (USPN 5,970,113) as applied to claim 1 above, and further in view of Daniels et al. (USPN 4,160,906).

11. With respect to claim 4, Crawford et al. do not disclose the digital control, regulation and storage unit contains a program, and operates according to said program, for determining acceptability of a load on said x-ray tube requested by a user. Daniels et al. disclose a program for determining acceptability of a load on an x-ray tube requested by a user (column 4, lines 17+ & column 9, line 50 – column 10, line 27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a program for determining acceptability of a load on said x-ray tube requested by a user in the Crawford et al. device, as taught by Daniels et al., to prevent x-ray tube failure and to promote longer x-ray tube life.

12. With respect to claim 6, Crawford et al. do not disclose the digital control, regulation and storage unit contains a program, and operates according to said program to store accumulated operating data associated with operation of said x-ray tube. Daniels et al. disclose this (column 10, lines 28+). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a program in Crawford et al. to store accumulated operating data associated with operation of the x-

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ray tube, to enable monitoring data of the x-ray tube, which would promote longer x-ray tube life.

13. With respect to claim 8, Crawford et al. do not specifically disclose the digital control, regulation and storage unit contains a program for monitoring operating of the plurality of components, including monitoring operating of the x-ray tube. Daniels et al. disclose a program for monitoring operating of the plurality of components, including monitoring operating of the x-ray tube (column 10, lines 28+). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a program in Crawford et al., for monitoring operating of the plurality of components, including monitoring operating of the x-ray tube, to promote longer x-ray tube life.

14. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford et al. (USPN 5,970,113) as applied to claim 1 above, and further in view of Laurent et al. (USPN 4,964,147).

15. With respect to claim 5, Crawford et al. do not disclose the x-ray tube has a rotating anode, and wherein said plurality of components include an electrical actuator for said rotating anode. Laurent et al. disclose a rotating anode including an electrical actuator for rotating the anode (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a rotating anode and an electrical actuator for rotating the anode in the Crawford et al. x-ray tube, to prolong x-ray tube life, as taught by Laurent et al.

16. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford et al. (USPN 5,970,113) as applied to claim 1 above, and further in view of Abdel-Malek (USPN 5,668,850).

17. With respect to claim 7, Crawford et al. do not disclose the digital control, regulation and storage unit contains a program, and operates according to said program, to determine at least one of wear of said x-ray tube and an expected remaining life of said x-ray tube. Abdel-Malek discloses a program to determine expected remaining life of an x-ray tube (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a program in Crawford et al. to determine expected remaining life of the x-ray tube, as taught by Abdel-Malek, to save time.

### ***Conclusion***

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Yun whose telephone number is 571 272-2497. The examiner can normally be reached on Monday-Friday 8:30-5:00pm.

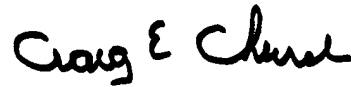
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jurie Yun  
June 30, 2005



Craig E. Church  
Primary Examiner